

REMARKS

Claims 13 to 27 are all the claims pending in the application.

The Office Action contains a new ground of rejection that was not necessitated by any amendment that applicants made to the claims. Accordingly, applicants submit that the finality of the present Office Action is premature and request that it be withdrawn.

The new ground of rejection is a double patenting rejection over the claims of copending Appln. Serial No. 11/883,749, which application was filed on August 6, 2007. Although the Examiner is correct that the copending application was filed after the date of the previous Office Action of July 16, 2007, the MPEP does not indicate that such a circumstance is sufficient to make a new Office Action a final rejection.

According to MPEP § 706.07(a), a final rejection can be made if applicants amended the claims which necessitated the new ground of rejection, or if applicants submitted an Information Disclosure Statement and the documents listed in the Information Disclosure Statement provided the basis for the new rejection. In the present case, applicants did not amend the claims and did not submit an Information Disclosure Statement that provided the basis for the new rejection. Accordingly, applicants submit that the finality of the Office Action is premature.

Claims 13-37 have been rejected under 35 U.S.C. § 102(b) as anticipated by the Go et al article entitled, “*Property Control of High Purity Titanium Dioxide by Vapor Phase Oxidation Process.*”

Applicants submit that the Go et al article does not anticipate the subject matter of the present claims and, accordingly, request withdrawal of this rejection.

The present invention as set forth in independent claim 13 is directed to a vapor phase process for producing a titanium oxide that comprises preliminarily heating each of a titanium halogenide-containing gas and an oxidative gas at a temperature of at least 600°C but less than 1,100°C before introducing the titanium halogenide-containing gas and the oxidative gas into a reactor, reacting the titanium halogenide-containing gas with the oxidative gas by introducing the titanium halogenide-containing gas and the oxidative gas into the reactor, to thereby allow reaction to proceed, with the temperature of the interior of the reactor being 900°C to less than 1,000°C, and maintaining a residence time of the titanium halogenide-containing gas and the oxidative gas in the reactor at temperature range of 900°C to less than 1,000°C of 0.1 seconds or less.

Thus, applicants have amended claim 13 to recite that the temperature of the interior of the reactor to which the titanium halogenide-containing gas and the oxidative gas is introduced is 900°C to less than 1,000°C, and that the maintaining of a residence time of the titanium halogenide-containing gas and the oxidative gas in the reactor of 0.1 seconds or less is at a temperature range of 900°C to less than 1,000°C. Support for this amendment appears in the present specification at page 19, lines 19-23.

Applicants have also amended independent claims 18 and 23 in a similar manner.

In addition, applicants have added dependent claims 38 to 40 to recite a residence time of 0.005 to 0.05 seconds, and have added new dependent claims 41 to 43 to recite a residence time of 0.01 to 0.05 seconds. Support for these amendments appear in the present specification at page 20, lines 8-13.

Applicants submit that Go et al do not disclose that the temperature of the interior of the reactor to which the titanium halogenide-containing gas and the oxidative gas is introduced is 900°C to less than 1,000°C, and do not disclose the step of maintaining a residence time of the titanium halogenide-containing gas and the oxidative gas in the reactor at temperature range of 900°C to less than 1,000°C of 0.1 seconds or less.

Go et al disclose that titanium tetrachloride vapor and an oxygen gas are individually preheated to 900 to 1,100°C, and that the preheated oxygen gas and the preheated titanium tetrachloride gas react together in a reactor tube.

Go et al further disclose that the residence time in the reactor tube is as short as about 0.1 to 0.4 seconds. See page 1168, left column, lines 6-7.

Applicants submit that the disclosure of a preheating range of 900 to 1100°C in Go et al does not anticipate the temperature range of 900°C to less than 1,000°C as recited in the present claims. See *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991 (Fed. Cir. 2006), where the Federal Circuit made clear that the endpoints of a disclosed range are not a specific disclosure of the endpoints, and that an endpoint is not a disclosure of a specific embodiment of the claimed range.

Further, applicants submit that the disclosure of a range of 0.1 to 0.4 seconds in Go et al does not anticipate the range of 0.1 seconds or less as recited in the present claims. Again, see *Atofina* decision.

In *Atofina*, the Federal Circuit held that a prior art disclosure of a temperature range of 100°C to 500°C, which was broader than and entirely encompassed a claimed ranges of 330 to

450°C, was not an anticipation of the claimed range, and that a prior art disclosure of a temperature range of 150° to 350°C that slightly overlapped the claimed temperature range of 330 to 450°C was not a disclosure of the claimed range and does not constitute a specific disclosure of the end points of that range, that is, 150°C and 350°C. The disclosure of a range of 150° to 350°C was a disclosure only of that range, and not a specific temperature in that range, and the disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points. Accordingly, the court held that the prior art did not disclose a specific embodiment of the claimed temperature range and did not anticipate the claimed range.

Similarly, in the present case, since Go et al only disclose a temperature range having an endpoint that is the same as an endpoint set forth in the present independent claims, and since Go et al only disclose a residence time having an endpoint that is the same as an endpoint set forth in the present independent claims, Go et al do not anticipate the present claims.

With respect to applicants' reliance on the decision in *Atofina vs. Great Lakes Chem. Corp*, 441 F.3d 991 (Fed. Cir. 2006), the Examiner states that the *Atofina* decision indicates that if the prior art range discloses the claimed range with "sufficient specificity," then the prior art range anticipates the claimed range. The Examiner states that in the present case, the express disclosure in Go et al of a time period of as low as 0.1 seconds is "sufficiently specific" to anticipate the claimed time period, which can be as high as 0.1 seconds or less.

Although the court in *Atofina* did indicate that where the prior art describes the claimed range with "sufficient specificity," the claim would be anticipated, the court did not explain what it meant by the term "sufficient specificity."

Applicants submit that the disclosure in Go et al of a temperature range of 900 to 1100°C is not a sufficiently specific disclosure that can anticipate a range of 900 to less than 1,000°C. As the Federal Circuit made clear in *Atofina*, the disclosure of an end point of a range is not a disclosure of the end point, and is not a disclosure of a specific embodiment of the claimed range. Since the disclosure in *Atofina* of a temperature range of 330 to 450°C was not sufficiently specific to anticipate a range of 150°C to 350°C, applicants submit that the disclosure in Go et al of 900 to 1,100°C similarly is not “sufficiently specific” to anticipate a range of 900 to less than 1,000°C.

Similarly, applicants submit that the disclosure in Go et al of a time period of as low as 0.1 seconds is not a sufficiently specific disclosure that can anticipate a range of 0.1 seconds or less. Again, as the Federal Circuit made clear in *Atofina*, the disclosure of an end point of a range is not a disclosure of the end point, and is not a disclosure of a specific embodiment of the claimed range. Since the disclosure in Go et al of a range of 0.1 seconds to 0.4 seconds is not a disclosure of a 0.1 seconds value or a disclosure of a range of 0.1 seconds or less, applicants submit that such a disclosure is not “sufficiently specific” to anticipate a different range.

Further, new claims 38 to 40 recite a range of 0.005 seconds to 0.05 seconds, and new claims 41 to 43 recite a range of 0.01 to 0.05 seconds, as disclosed in the present specification at page 20, lines 8-13. Applicants submit that these claims further distinguish over Go et al, who nowhere disclose or suggest values below 0.1 seconds.

In view of the above, applicants submit that the Go et al article does not anticipate the subject matter of the present claims and, accordingly, request withdrawal of this rejection.

Claims 13-27 have been provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 10-30 of copending Application No. 11/883,749.

In response, since the copending application has not as yet been examined, and if the present application overcomes all of the outstanding rejections except for the double patenting rejection, then the present application can be passed to issue as long as the copending application has not been allowed. Accordingly, applicants defer responding to this rejection.

In view of the above, please let us have your comments and instructions for responding to this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

Sheldon I. Landsman
Sheldon I. Landsman
Registration No. 25,430

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: May 27, 2008